

REMARKS

Withdrawn rejections

The withdrawal of the following rejections are duly noted and appreciated:

- anticipated or alternatively obvious under 102/103 over Tsou et al (WO 01/85837)
- non-statutory obviousness type double patenting over US 6875813.

Pending Rejection

Claims 1-5, 7, 11, 12, 14-18, 23, 24, 26-33, 35-41, 44, 45, 47-50, 51, and 52 stand rejected under 35 U.S.C. § 103 as being obvious over Tsou et al as previously applied, and optionally in view of Waddell et al (US 2005/0027062: published February 3, 2005), Dias et al (US 2004/0132894: published July 8, 2004), Jones et al (US 2004/0087704: published May 6, 2004), or Waddell (US 2004/0030036: published February 12, 2004). This rejection is respectfully traversed for the following reasons.

In response to Applicants assertion of a priority date of September 17, 2002, in the Final Office Action, it is held that Applicants are only entitled to an effective filing date of December 21, 2004. Applicants disagree.

First, this ignores the fact that Applicants present application is a 371 filing of a PCT application, filed with the US PCT office on May 30, 2003. As a 371 filing is an exact duplicate of the PCT filing, Applicants are entitled to an effective filing date of May 30, 2003. Furthermore, before the addition of references to the related provisional application, a review of both the present specification and the provisional application, as found on the USPTO PAIR page, the PCT filing is an exact duplicate of the provisional application, and the PCT is entitled to the benefit of the provisional filing date. Thus, as the current filing is a duplicate of the PCT application which is a substantial duplicate of the provisional, the current filing is entitled to the effective filing date of July 17, 2002.

Second, the reasoning behind the stated effective filing date in the Final Office Action – that “applicants plastomer melt index is not disclosed and applicant negative limitation in the last two lines of claim 1 ... is not present in the provisional” – is wrong. On page 12, lines 23-24 of the provisional (see attachment 1), the melt index of the plastomer is disclosed as being between 0.10 and 30 dg/min. On page 22, lines 6-9 (see attachment 2), it is taught that paraffinic,

naphthenic, and aromatic oils are substantially absent, meaning that the oils are only present up to 0.2 wt% of the air barrier composition.

Thus, the present claims are fully supported by the provisional application. Applicants are entitled to the priority filing date of July 17, 2002, predating all secondary references in the rejection and reducing the present rejection to being based solely on Tsou (which is a rejection that has already been presented and withdrawn).

If the position is maintained that applicants are not entitled to an effective filing date of July 17, 2002, reasons other than those set forth in the Final Office Action are requested.

Again, as stated in Applicants prior response, the secondary references are not applicable as prior art, and the rejection fails to establish *prima facie* obviousness as Tsou teaches the use of, albeit a reduction from conventional amounts, a plasticizer of the oils noted as being substantially absent in the recited composition. In all examples provided, the compositions of Tsou include STRUKTOL. Thus, while Tsou fails to teach substituting, reducing, or eliminating aliphatic, naphthenic, and aromatic oils.

For the above reasons, Tsou fails to teach or disclose all elements of the recited invention and *prima facie* obviousness has not been established. It is respectfully requested that the rejection be withdrawn.

Applicants believe all of the claims now pending in the subject patent application are allowable. Thus, the Examiner is respectfully requested to allow all pending claims. If there are any questions regarding this application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

Respectfully submitted,

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ATTACHMENT 1

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from 0.3 to 2.0 in yet another embodiment, wherein a desirable range may be any combination of any upper limit with any lower limit. Expressed another way, preferred copolymers contain from 0.2 to 10 wt% of bromine, based on the weight of the polymer, from 0.4 to 6 wt% bromine in another embodiment, and from 0.6 to 5.6 wt% in another embodiment, are substantially free of ring halogen or halogen in the polymer backbone chain. In one embodiment of the invention, the elastomer is a copolymer of C₄ to C₇ isoolefin derived units (or isomonoolefin), *p*-methylstyrene derived units and *p*-halomethylstyrene derived units, wherein the *p*-halomethylstyrene units are present in the interpolymer from 0.4 to 3.0 mol% based on the total number of *p*-methylstyrene, and wherein the para-methylstyrene derived units are present from 3 wt% to 15 wt% based on the total weight of the polymer in one embodiment, and from 4 wt% to 10 wt% in another embodiment. In another embodiment, the *p*-halomethylstyrene is *p*-bromomethylstyrene.

The elastomer may be present in compositions of the invention from 10 to 100 phr in one embodiment, and from 20 to 80 phr in another embodiment, and from 30 to 70 phr in yet another embodiment, and from 40 to 60 phr in yet another embodiment, wherein a desirable phr range for the elastomer is any upper phr limit combined with any lower phr limit described herein.

Plastomer

The plastomers that are useful in the present invention can be described as polyolefin copolymers having a density of from 0.85 to 0.915 g/cm³ and a melt index (MI) between 0.10 and 30 dg/min. In one embodiment, the useful plastomer is a copolymer of ethylene derived units and at least one of C₃ to C₁₀ α -olefin derived units, the copolymer having a density in the range of less than 0.915 g/cm³. The amount of comonomer (C₃ to C₁₀ α -olefin derived units) present in the plastomer ranges from 2 wt% to 35 wt% in one embodiment, and from 5 wt% to 30 wt% in another embodiment, and from 15 wt% to 25 wt% in yet another embodiment, and from 20 wt% to 30 wt% in yet another embodiment.

ATTACHMENT 2

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embodiment, and from 5 to 50 phr in yet another embodiment. Some commercial examples of processing aids are SUNDEX™ (Sun Chemicals), a naphthenic processing oil, PARAPOL™ (ExxonMobil Chemical Company), a polybutene processing oil having a number average molecular weight of from 800 to 3000, and FLEXON™ (ExxonMobil Chemical Company), a paraffinic petroleum oil. In one embodiment of the invention, paraffinic, naphthenic and aromatic oils are substantially absent, meaning, they have not been deliberately added to the compositions used to make the air barriers, or, in the alternative, if present, are only present up to 0.2 wt% of the compositions used to make the air barriers. In another embodiment of compositions of the invention, naphthenic and aromatic oils are substantially absent. Commercial examples of these include, for example, FLEXON oils (which contain some aromatic moieties) and CALSOL oils (a naphthenic oil).

The compositions produced in accordance with the present invention typically contain other components and additives customarily used in rubber mixes, such as effective amounts of other nondiscolored and nondiscoloring processing aids, pigments, accelerators, crosslinking and curing materials, antioxidants, antiozonants. General classes of accelerators include amines, diamines, guanidines, thioureas, thiazoles, thiurams, sulfenamides, sulfenimides, thiocarbamates, xanthates, and the like. Crosslinking and curing agents include sulfur, zinc oxide, and fatty acids. Peroxide cure systems may also be used. The components, and other curatives, are typically present from 0.1 to 10 phr in the composition.

Generally, polymer blends, for example, those used to produce tires, are crosslinked. It is known that the physical properties, performance characteristics, and durability of vulcanized rubber compounds are directly related to the number (crosslink density) and type of crosslinks formed during the vulcanization reaction. (See, e.g., Helt et al., *The Post Vulcanization Stabilization for NR* in RUBBER WORLD, 18-23 (1991)). Generally, polymer blends may be crosslinked by adding curative molecules, for example sulfur, metal oxides, organometallic compounds,